

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-17 (Canceled)

18. (Previously Presented) A process for the production of an alkyl-substituted butenol having the formula (I):



wherein R^1 is a saturated or olefinically unsaturated alkyl or cycloalkyl group having from 4 to 16 carbon atoms and wherein R^1 is optionally substituted by an alkyl, cycloalkyl, aryl or alkaryl having up to 12 carbon atoms; and R^2 is hydrogen or an alkyl group having from 1 to about 6 carbon atoms the process comprising:

by reacting at least one aldehyde of the formula (II) with at least one corresponding lower aldehyde:



and R^1 has the same meaning as in formula (I);

wherein:

(i) aldol condensation is carried out in an inert organic solvent, and
(ii) reduction of the unsaturated aldehydes is carried out in the presence of an optionally calcined copper/zinc catalyst, and is carried out continuously under isothermal conditions at a temperature ranging from 45 to 60°C and under a hydrogen pressure of 1 to 300 bar at an LHSV (liquid hourly space velocity) of 0.3 to 3.0 hr⁻¹.

19. (Previously Presented) The process of claim 18, wherein the aldol condensation is carried out in a nonpolar organic solvent which can form an azeotrope with water.

20. (Previously Presented) The process of claim 18, wherein the aldol condensation is carried out in the presence of a catalyst which is an ammonium salt of an organic acid.

21. (Previously Presented) The process of claim 18, wherein R² in formula (I) is a methyl group.

22. (Previously Presented) The process of claim 18, wherein R² in formula (I) is a methyl group and wherein propionaldehyde is used in a 2.5 to 10-fold molar excess based on the aldehyde of formula (II).

23. (Previously Presented) The process of claim 22, wherein the propionaldehyde is used in a 2.5 to 3.5-fold molar excess based on the aldehyde of formula (II).

24. (Previously Presented) The process of claim 18 wherein R' is a 4-(2,2,3-trimethylcyclopent-3-en-1-yl) group.

25. (Previously Presented) The process of claim 18, wherein the organic solvent in (i) is selected from the group consisting of toluene, xylene, benzene, cyclohexane and methyl cyclohexane.

26. (Previously Presented) The process of claim 18, wherein R¹ is a saturated alkyl group having from 4 to 16 carbon atoms.

27. (Previously Presented) The process of claim 18, wherein R¹ is an olefinically unsaturated alkyl group having from 4 to 16 carbon atoms.

28. (Previously Presented) The process of claim 18, wherein R¹ is an olefinically unsaturated cycloalkyl group having from 4 to 16 carbon atoms.

29. (Previously Presented) The process of claim 18, wherein R¹ is not further substituted.

30. (Previously Presented) The process of claim 18, wherein R¹ is substituted by an alkyl, cycloalkyl, aryl or alkaryl having up to 12 carbon atoms.

31. (Previously Presented) The process of claim 18, wherein R² is hydrogen.

32. (Previously Presented) The process of claim 18, wherein R² is an alkyl group having from 2 to 6 carbon atoms.

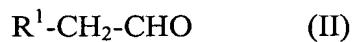
33. (Previously Presented) The process of claim 18, wherein said LHSV (liquid hourly space velocity) ranges from 0.6 to 1.2 hr⁻¹.

34. (Previously Presented) A process for the production of an alkyl-substituted butenol having the formula (I):



wherein R¹ is a saturated or olefinically unsaturated alkyl or cycloalkyl group having from 4 to 16 carbon atoms and wherein R¹ is optionally substituted by an alkyl, cycloalkyl, aryl or alkaryl having up to 12 carbon atoms; and R² is hydrogen or an alkyl group having from 1 to about 6 carbon atoms the process comprising:

by reacting at least one aldehyde of the formula (II) with at least one corresponding lower aldehyde:



and R^1 has the same meaning as in formula (I);

wherein:

(i) aldol condensation is carried out in an inert organic solvent, and
(ii) reduction of the unsaturated aldehydes is carried out in the presence of an optionally calcined copper/zinc catalyst, and

is carried out continuously in a fixed bed reactor at a LHSV (liquid hourly space velocity) of 0.3 to 3.0 hr^{-1} ,

under isothermal conditions at a temperature ranging from 45 to 60°C, and

under a hydrogen pressure of 1 to 300 bar.